**2023 IWSHM Special Session Request Form**

Special Session Title**: “SHM Technology in Wind Turbines”**

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**Keywords: wind turbines, sensors, sensing, SHM, damage detection, signal processing**

**Scope of Session**

The session covers the main Structural Health Monitoring (SHM) topics on wind turbine structures. The research methodologies here span a wide range of experimental and numerical approaches in complementary investigations of a rotor with blades drive train and support structure. The crucial issue is assessing fibre-reinforced polymer materials because they are widely used for wind turbine blades. The research methodologies should span a wide range of topics from piezoelectric transducers, elastic waves propagation phenomenon, fibre Bragg gratings, structural vibrations analysis, electro-mechanical impedance method, acoustic emission, damage mechanics, 3D laser vibrometry applications and others. The combination of proposed techniques allows for performing efficient both local and global SHM of the structure. It also includes various techniques related to diagnostics (damage size estimation and damage type recognition) and prognostics. The promising combination of selected techniques should lead to an innovative approach to ensure the safe operation of the structure.